Write a program to find the earliest meeting time acceptable to three people. Each person is willing to state their possible meeting times by means of a function that tells, for each time \( t \), the earliest time at or after \( t \) that they are available for a meeting. (Do not confuse this \( t \) with the execution time variable. You may ignore execution time for this problem.)

Here are two solutions. They are the same computationally, but they use different specifications. The first is “backward-looking”, stating that no previous time was acceptable. The second is “forward-looking”. Which do you prefer?

Let the three functions be \( f \), \( g \), and \( h \). Let \( \text{now} \) be the current time. Let \( M t \) mean that \( t \) is an acceptable meeting time. Formally, \( M t \equiv t = f t = g t = h t \). Let \( P t \) mean that no time between \( \text{now} \) and \( t \) is acceptable. Formally, \( P t \equiv \neg \exists u \cdot \text{now} \leq u < t \land M u \).

\[
\begin{align*}
M t' \land P t' & \iff t := \text{now}. \quad P t \Rightarrow M t' \land P t' \\
P t \Rightarrow M t' \land P t' & \iff u := f(g(h t)). \quad \text{if } u = t \text{ then ok else } u := t. \quad P t \Rightarrow M t' \land P t' \quad \text{fi}
\end{align*}
\]

Let the three functions be \( f \), \( g \), and \( h \). Let \( \text{now} \) be the current time. Let \( M t t' \) mean that \( t' \) is the first acceptable meeting time from time \( t \) onwards. Formally,

\[
M t t' \equiv t \leq t' \land (\exists u \cdot t \leq u < t' \land u = f u = g u = h u) \land t' = f t' = g t' = h t'
\]

Then the problem is \( M \text{now} \), and the solution is

\[
\begin{align*}
M \text{now} t' & \iff t := \text{now}. \quad M t t' \\
M t t' & \iff u := f(g(h t)). \quad \text{if } u = t \text{ then ok else } t := u. \quad M t t' \quad \text{fi}
\end{align*}
\]